## CLAIMS

1. In a WDM communication system, a transmitter comprising:

a plurality of lasers assigned to transmit optical signals on a corresponding plurality of WDM channels;

a multiplexer that combines said plurality of optical signals onto a single fiber to form a composite WDM signal;

an optical channel monitor that monitors said composite WDM signal to determine wavelengths of said plurality of optical signals; and

a control block that controls transmission wavelengths of said plurality of lasers to match wavelengths of said optical signals to desired WDM channel positions.

2. The transmitter of claim 1 further comprising:

a optical attenuator that blocks further transmission of said composite WDM signal when said optical channel monitor determines that a wavelength of at least one of said plurality of lasers is outside a desired range.

3. The transmitter of claim 1 further comprising:

a tap coupler that splits off a portion of said composite WDM signal for monitoring by said optical channel monitor.

4. The transmitter of claim 1 wherein said optical channel monitor comprises:

a tunable filter that is tuned through a spectrum of said WDM signal;

a photodetector, coupled to an output of said tunable filter, that detects peaks of said WDM signal.

5. The transmitter of claim 1 wherein said optical channel monitor comprises:

an arrayed waveguide grating that outputs a plurality of monitor signals each indicative of composite WDM signal strength at a particular spectral position.

6. The transmitter of claim 1 wherein said optical channel monitor comprises an optical spectrum analyzer.

7. In a WDM communication system, a method for transmitting comprising:

generating a plurality of optical signals on a plurality of WDM channels using a corresponding plurality of lasers;

multiplexing said plurality of optical signals onto a single fiber to form a composite WDM signal;

monitoring said composite WDM signal to determine wavelengths of said plurality of lasers; and

controlling transmission wavelengths of said plurality of lasers to match wavelengths of said optical signals to desired WDM channel positions.

8. The method of claim 7 further comprising:

blocking further transmission of said composite WDM signal when monitoring determines that a wavelength of at least one of said plurality of lasers is outside a desired range.

9. The method of claim 7 further comprising:

splitting off a portion of said composite WDM signal for said monitoring.

10. The method of claim 7 wherein monitoring comprises:

tuning a tunable filter through a spectrum of said WDM signal; and

detecting peaks of said WDM signal based on output of said tunable filter; and

determining wavelengths of said lasers at positions of said peaks.

11. The method of claim 7 wherein monitoring comprises:

employing an arrayed waveguide grating to output a plurality of monitor signals each indicative of composite WDM signal strength at a particular spectral position.

12. The method of claim 7 wherein monitoring comprises:

employing an optical spectrum analyzer.

13. In a WDM communication system, apparatus for transmitting comprising:

means for generating a plurality of optical signals on a corresponding plurality of WDM channels;

means for multiplexing said plurality of optical signals onto a single fiber to form a composite WDM signal;

means for monitoring said composite WDM signal to determine wavelengths of said plurality of optical signals; and

means for controlling transmission wavelengths of said plurality of optical signals to match wavelengths of said optical signals to desired WDM channel positions.

14. The apparatus of claim 13 further comprising:

means for blocking further transmission of said composite WDM signal when monitoring determines that a wavelength of at least one of said plurality of lasers is outside a desired range.

15. The apparatus of claim 13 further comprising:

means for splitting off a portion of said composite WDM signal for input to said monitoring means.

16. The apparatus of claim 13 wherein said monitoring means comprises:

a tunable filter through a spectrum of said WDM signal; and

means for detecting peaks of said WDM signal based on output of said tunable filter; and

means for determining wavelengths of said lasers at positions of said peaks.

17. The apparatus of claim 13 wherein said monitoring means comprises:

an arrayed waveguide grating that outputs a plurality of monitor signals each indicative of composite WDM signal strength at a particular spectral position.

18. The apparatus of claim 13 wherein said monitoring means comprises an optical spectrum analyzer.